## **ENGINEER PRIME POWER OPERATIONS**

## **CONTENTS**

	Page
PREFACE	v
Chapter 1 OVERVIEW	1-1
ELECTRICAL POWER	1-1
THE ELECTRICAL POWER CONTINUUM	1-1
PRIME POWER OPERATIONS	1-2
Chapter 2. ORGANIZATION	2-1
ENGINEER PRIME POWER UNITS	2-1
ENGINEER TEAM (PRIME POWER)	2-1
ENGINEER COMPANY (PRIME POWER)	2-3
ENGINEER BATTALION (PRIME POWER)	2-4
Chapter 3. MISSION	3-1
MISSION STATEMENT	3-1
POWER GENERATION	3-1
Organic Equipment	3-1
Nonstandard Portable Equipment	3-2
Fixed Power Plants	3-3

Distribution Restriction: Approved for public release; distribution is unlimited.

	Page
POWER-RELATED TECHNICAL ASSISTANCE	3-3
Load Survey	3-3
Distribution-System Analysis and Design	3-3
Distribution-System Construction, Maintenance, and Repair	3-4
Industrial Power System Maintenance and Operation	3-5
Technical Assistance to Staff	3-5
Technical Assistance to CORs	3-6
CHAPTER 4. EMPLOYMENT	4-1
COMMAND AND CONTROL	4-1
War	4-1
Short of War	4-1
Nation Assistance	4-2
Disaster Relief	4-2
PRIME POWER EMPLOYMENT FUNDAMENTALS	4-3
Modes of Power Generation	4-3
Power Transformation and Distribution	4-3
Army Facilities Components System (AFCS)	4-4
Power System Upgrade	4-4
Employment Priorities	4-5
Planning Guidlines	4-5
PRIME POWER SUPPORT REQUEST PROCEDURES	4-6
War	4-6
COMMZ	4-7
Combat Zone (CZ)	4-7
Short of War	4-7
CHAPTER 5. PLANNING CONSIDERATIONS	5-1
ENVIRONMENT	5-1
Climate	5-1
Terrain and Vegetation	5-1
Lighting	5-2

	Page
THREAT	5-2
TIME	5-2
THEATER INFRASTRUCTURE LEVEL	5-2
PERSONNEL	5-3
CONSTRUCTION SUPPORT REQUIREMENTS	5-3
LOGISTICAL SUPPORT REQUIREMENTS	5-4
Supply	5-4
Transportation	5-4
Materials Handling Equipment (MHE)	5-4
Services	5-5
Maintenance	5-5
Communications	5-5
SAFETY	5-5
APPENDIX A. POWER SYSTEM CONCEPTS	<b>A-</b> 1
GENERAL	<b>A-</b> 1
POWER GENERATION	<b>A</b> -1
POWER DISTRIBUTION AND TRANSFORMATION	<b>A</b> -1
Primary Distribution	<b>A</b> -3
Transformation	A-2
Secondary Distribution Networks	A-5
POWER SYSTEM CHARACTERISTICS	A-5
Output Voltage	A-5
Single-Phase or Three-Phase Power	A-5
Output Capacity	A-0
Reliability	A-6
Portability	<b>A-</b> 7
Frequency	A-′
Line Loss and Voltage Drop	A-′
APPENDIX B. SUPPORT REQUEST INFORMATION	B-:

	Page
APPENDIX C. FREQUENCY AND VOLTAGE DATA	<b>C</b> -1
GLOSSARY Glos	ssary-1
REFERENCES Refere	nces-1
INDEX In	ndex-1